Cooperative Federalism, Nutrients, and the Clean Water Act: Three Cases Revisited

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Summary

Cooperative federalism varies widely from program to program, and depends on the relationship each statute prescribes. The Clean Water Act (CWA), while providing ample room for state participation, is heavily federal and leaves little about this relationship to chance. Nonetheless, the federal-state interplay goes on in as many venues as there are states and clean water programs, and the tensions that arise are inevitable. The cases discussed here raise three different aspects of CWA federalism: inaction by the federal partner, inaction by the state partner, and collaborative action by both partners that is also being challenged on grounds of cooperative federalism. These questions are not abstract. They affect the most uncontrolled form of water pollution in America, and three of the most iconic ecosystems on the continent.

Over four decades, the Clean Water Act (CWA)[1] has made great strides. Unfortunately, however, while many waterways are seeing a return to aquatic life that had all but vanished, many more are going downhill, principally to nonpoint source pollution, principally from agricultural sources, principally from nitrogen and phosphorus loadings. The numbers are staggering. The count of polluted waterways rises every time it is measured, and it comes back to the same sources each time. Phosphorous and nitrogen, undoubtedly beneficial to crop production at certain levels, are eating America's waterways alive.

After years of inaction, prompted forward by citizen organizations and lawsuits, the U.S. Environmental Protection Agency (EPA) has begun to respond. Predictably, the Agency's response has in turn triggered a storm of protests from members of the farm industry and states that have had difficulty in moving the ball. In their legal interventions, these parties rely on conceptions of the CWA that mistake its particular brand of federalism, and EPA's overriding responsibilities. This Article is intended to provide a more distanced view of the cases, their issues, and of the stakes involved.

I. Federalism and the CWA

We have a federal CWA for one reason: programs run by the states with federal assistance had failed utterly for 25 years. Members of both houses of the U.S. Congress, members of both parties in Congress, saw the problem plain. By 1972, few states had even bothered to set water quality standards, much less enforce them. The playing field was not only uneven, it was untenable. It was time for a new approach, a national one premised on a dominant federal role.

In the process, however, Congress was reluctant to jettison state programs entirely. They still held the (unrealized) promise of progress. It proceeded then to give states a limited and closely supervised set of authorities,

Author's Note: The author's prior work on this subject includes The Clean Water Act Returns (Again): Part I, TMDLs and the Chesapeake Bay, 41 ELR 10208 (Mar. 2011); The Clean Water Act TMDL Program: Law, Policy, and Implementation (2d ed., Envtl. L. Inst. 2002) (2000); and The Regulation of Toxic Pollutants Under the Clean Water Act, 21 ELR 10528 (Sept. 1991). *This Article in part responds to an article entitled* Nutrients in the Courts: Cooperative Federalism Entangles EPA Actions on Nitrogen and Phosphorous, 44 ELR 10163 (Mar. 2014), *written by attorneys representing farm industry parties in the referenced cases. By way of disclaimer, the author has no relationship to the litigation at hand. The research assistance of Tulane law students Laura Cottingham, Lauren Peralta, Dana Sabghir, and Rebecca Timmons is acknowledged with gratitude.*

1. 33 U.S.C. §§1251-1387, ELR Stat. FWPCA §§101-607.

but retained earlier language stating: "It is the policy of Congress to recognize, preserve, and protect the primary responsibilities and rights of States to prevent, reduce and eliminate pollution."[2]

No phrase in the CWA is so beguiling, and misleading. Reading the Act's history, this primacy was exactly what Congress rejected. Reading further into the statute, what follows is a thoroughly EPA-driven statute. The assurances of §1251(b) were apt for the age and the statute that gave them birth. They remain like an appendix on a law that has passed them by. Taken literally, they contradict most that the CWA goes on to require, including even the water quality standards program at issue in the cases of this Article. Whatever sound principles may guide the decisions in these lawsuits, "state primacy" should not be one of them.

A. *The History*

The language of §1251(b) dates back to 1948 and the first U.S. law to address water pollution, declaring "the policy of Congress to recognize, preserve, and protect the primary responsibilities and rights of the States in controlling water pollution."[3] Which was what the law in fact did. The 1948 statute offered funding for sewage treatment plants, assistance from the U.S. Surgeon General on pollution issues, and a process for referral of serious matters to the U.S. Attorney General, who could then sue to abate a discharge based on concepts of common law.[4] State primacy was genuine.

The 1948 language was retained like a catechism in federal amendments of 1956 and 1961, which made federal enforcement yet more difficult, and those of 1965, which encouraged states to adopt water quality standards, based on their own criteria and uses, and then move to abate discharges that violated them.[5] State primacy remained. Even a national goal of "clean water" was rejected in favor of state management. The federal role was again to fund, to advise, and, where pollution affected interstate waters, to call an "abatement conference" to jawbone a solution, and then only when all else failed.

All else failed. From the 1948 Act to 1970, the United States had managed to bring just a single enforcement case against a single discharger.[6] Federal-state abatement conferences on the Potomac River and the Puget Sound were limping into their second decade.[7] Rivers were catching fire,[8] a funeral was held for the death of Lake Erie,[9] drinking water intakes along the Mississippi were choking on dead fish.[10] By 1972, when Congress was moved to act again, one-half of the states had no water quality standards, fewer still had set numerical limits in them, and fewer still had permit systems applying them to polluters.[11]

One of the most remarkable facts of the 1972 Act is the degree to which Congress appreciated the failures here, and their causes. Chief among their observations was that state-based programs led to a race-to-the-bottom ("industries moving from State to State in search of less strict pollution standards,"[12] Rep. Michael Harrington, D-Mass.), and were highly susceptible to local industries ("due to the pressures of powerful economic interests, the States do not establish meaningful water quality levels,"[13] Rep. Charles Vanik, D-Ohio). In a moment of candor rare for this body, the Chair of the U.S. House of Representatives Public Works Committee observed:

> These are all men of good intentions, but they get beat over the head by powerful interests back home . . . say somebody is from South Carolina or Georgia, and the Georgia Power Co. gets after them. You can't find finer men, or men of more integrity. But you can only go so far.[14]

How contemporary the comment seems.

Not everyone agreed. The states and their allies (e.g., American Petroleum Institute, American Iron and Steel Institute), complaining about federal "commandeering,"

2. 33 U.S.C. §1251(b). The complete provision reads as follows:
   > It is the policy of the Congress to recognize, preserve, and protect the primary responsibilities and rights of States to prevent, reduce, and eliminate pollution, to plan the development and use (including restoration, preservation, and enhancement) of land and water resources, and to consult with the Administrator in the exercise of his authority under this chapter.
3. Water Pollution Control Act of 1948, Pub. L. No. 80-845, 62 Stat. 1155 (1948) (codified as amended in scattered sections of 33 U.S.C.).
4. *Id. See also* Frank J. Barry, *The Evolution of the Enforcement Provisions of the Federal Water Pollution Control Act: A Study in the Difficulty in Developing Effective Legislation*, 68 Mich. L. Rev. 1103, 1104-07 (1970). For a legislative history of the CWA more generally, see William L. Andreen, *The Evolution of Water Pollution Control in the United States—State, Local and Federal Efforts, 1789-1972: Part I*, 22 Stan. Envtl. L.J. 145, 178-85 (2003); *The Evolution of Water Pollution Control in the United States—State, Local, and Federal Efforts, 1789-1972: Part II*, 22 Stan. Envtl. L.J. 215, 287 (2003).
5. Pub. L. No. 89-234, 79 Stat. 903 (codified as amended in scattered sections of 33 U.S.C.).
6. *See* S. Rep. No. 414, 92d Cong., 1st Sess. 5 (1971) ("The record shows an almost total lack of enforcement. Under this [abatement] procedure, only one case has reached the courts in more than two decades.").
7. William H. Rodgers Jr., *Industrial Water Pollution and the Refuse Act: A Second Chance for Water Quality*, 119 U. Pa. L. Rev. 761, 803 (1971).
8. *See* Patricia Howard, *A Happier Cleveland*, Hous. Post, Oct. 24, 1990, at A2 (describing the 1969 fire on the Cuyahoga River in Cleveland, Ohio).
9. Barry Commoner, The Closing Circle: Nature, Man, and Technology 94-111 (1971) (describing damage to the water body and noting, "[t]he most blatant example of the environmental crises in the United States is Lake Erie, a huge inland sea large enough to symbolize the permanence of nature").
10. Perry Beeman, *Old Man River in Critical Condition*, Des Moines Reg., Mar. 7, 1994, at 1.
11. S. Rep. No. 414, 92d Cong., 2d Sess., *reprinted in* 1972 U.S. Code Cong. & Admin. News at 3671.
12. H. Rep. No. 911, 92d Cong., 2d Sess. 396 (1972), *reprinted in* Library of Congress, Cong. Research Service, Environmental Policy Division, A Legislative History of the Water Pollution Control Act Amendments of 1972, 517 (1973).
13. *Id.* at 494.
14. Harvey Lieber & Bruce Rosinoff, Federalism & Clean Waters 59 (1975) (quoting Jamie Heard, *Environment Report: Water Pollution Proposals to Test Blatnik's Strength as Public Works Chairman*, 3 Nat'l J. 1719 (1971).

fought bitterly to retain state leadership of water pollution control. (One might usefully ask why state primacy would be of such interest to major industries, then and today). They found adherents in both houses, but not many. The Acting Chair of the House Public Works Committee, long a favorable venue for state authority, spoke for the majority when he interrupted a witness to say:

> We have heard from the Chamber of Commerce from the very beginning, "Don't pass any Federal Law; just keep it at home with the State." So consequently, we didn't get anything done. We left it to the States, year after year, and we didn't get a single thing but a bunch of nursery rhymes as to the Constitution, and we didn't get any clean water until the Federal Government insisted upon it and made some federal dollars available to the State for that use.[15]

Sen. Edmund Muskie (D-Me.), the leading sponsor of the U.S. Senate bill that prevailed, had so little faith in state water quality programs that he opposed including them at all.[16]

For these reasons then, and by overwhelming margins, Congress passed an EPA-centric act in which the states play important but subsidiary roles.[17] This was now a national program directed by a national agency. Section 1251(b) was trumped by new §1251(a), announcing a national goal to "restore and maintain" the nations waters, followed by, lest this goal languish, two interim goals: that the discharge of pollutants be eliminated in 12 years, and that water quality protective of fish, wildlife, and human recreation be achieved within 10 years.[18] Aspirational targets to be sure, but they remain, and their new requirements would drive the Act forward.

B. The Statutory Scheme

In terms of federalism, the CWA relegates the states to a highly circumscribed role for those dischargers most on the national mind in 1972. All point sources, most of them associated with industrial processes, are limited to levels determined exclusively by EPA, based on technology standards that have nothing to do with water quality,[19] under federal permits,[20] and federally enforced.[21] Discharge permits are to be modified to reflect state water quality standards, but one way only: up.[22] States may assume the administration of these programs, if they meet prescribed conditions, but even here, EPA continues to oversee their regulations, permitting, and enforcement, filing against polluters itself where the states underenforce, pulling back state programs that are underperforming as a whole.[23] No one could call this arrangement state primacy.

Turning to state water quality programs that had run largely on their own (when they run at all), the Act again circumscribes, and to an important degree federalizes, the game. Water quality *criteria* that set the stage for state standards are to be derived in the first instance by EPA,[24] and bind the states unless they develop persuasive reasons not to, a "presumption" in federal favor.[25] States retain the flexibility to establish the *uses* to which these criteria would apply, i.e., secondary contact recreation, freshwater fisheries, but by regulation may not adopt *certain* uses,[26] including uses (and criteria) that interfere with the attainment of *downstream* water quality,[27] may not adopt a use below that supported by *existing* water quality,[28] nor below that *achievable* by additional point or nonpoint controls, unless achieving it is virtually impossible or causes "widespread economic or social impact."[29]

Nor may states allow degradation of quality *better* than that called for by their assigned use unless there is a compelling economic/social purpose, and all dischargers, point and nonpoint, comply with technological and best management requirements.[30] Nor may they allow the slightest degradation of *high-quality* waters,[31] none at all. State policies to implement these requirements are required,[32] and subject to EPA approval. Up to this point, the state role in the mix could be considered more "go-first" than "primary," but either way, it is on a short leash, with places they may not go at all.

The leash becomes yet shorter. States are required to *review* their standards at least every three years, for the purposes of modifying them as appropriate.[33] Any proposed modification, however, comes with EPA scrutiny and

15. *Water Pollution Control Legislation—1971: Hearings on H.R. 11896, H.R. 11895 Before the Comm. on Public Works*, 92d Cong. 483 (1971) (question of Representative. Jones during testimony by James Krieger, Chairman Water and Power Committee, Los Angeles Chamber of Commerce).
16. U.S. Senate Comm. on Public Works, 93rd Cong., 2d Sess., A Legislative History of the Water Pollution Control Act Amendments of 1972, 171 (1972).
17. The author is not alone in reaching this conclusion: see *Wyoming v. United States*, 279 F.3d 1214 (10th Cir. 2002) (states "serve merely as agents for the implementation of federal water pollution control policy; it's the federal government, not individual states, that shapes and directs the regulatory policy"); *id*. at 1232-33); for a more recent view, see *Catskill Mountain Chapter of Trust Unlimited v. EPA*, Nos. 08-CV5606 (KMK), 08-CV 8430 (KMK), 44 ELR 20068 (S.D.N.Y. Mar. 28, 2014) (general indications of congressional intent "must be interpreted in the context of the specific, carefully designed balance between federal and state authority created within the NPDES program"), *id*. at 48, 49 (concluding: "In other words, the CWA respects states' rights by sometimes removing a federal regulatory ceiling but it also supports states rights by maintaining a federally enforced floor"); *id.* at 52.
18. 33 U.S.C. §1251(a).
19. *See id.* §§1342, 1311 (technology standards); *see* EPA v. California ex rel. state Water Resources Control Board, 426 U.S. 200, 6 ELR 20563 (1976); and Weyerhauser v. Costle, 590 F.2d 1011, 9 ELR 20284 (D.C. Cir. 1978) (rejecting water quality considerations).
20. 33 U.S.C. §1342.
21. *Id*. at §1319.
22. *See* 33 U.S.C. §1312(a), (discharge permits upgraded to meet water quality standards; 13 U.S.C. §1342(o) (anti-backsliding)).
23. 33 U.S.C.A. §1342(c).
24. *Id*. §1314(a).
25. *See* Mississippi Commission on Natural Resources v. Costle, 625 F.2d 1269, 10 ELR 20931 (5th Cir. 1980).
26. 40 C.F.R §131.10(a).
27. *Id*. at §131.10(a)(2).
28. *Id*. at §131.10(k).
29. *Id*. at §131.10(g)(6).
30. *Id*. at §131.12(a)(1), (2).
31. *Id*. at §131.12(a)(3).
32. *Id*. at §131.12(a).
33. 33 U.S.C. §1313(c).

approval.[34] If EPA disagrees, further, it is directed to promulgate the standard itself.[35] Further, if the EPA believes that a *new* standard not proposed by the state is necessary, it is directed, once again, to promulgate one on its own.[36] At this point, EPA is acting solo.

The state obligations continue. To provide accountability, the Act calls on state agencies to submit *biennial reports* to EPA on, inter alia, the quality of their waters, their pollutants, and the extent to which their uses are being maintained.[37] A report card. (What does that sound like?) While these reports carry no further legal obligations of their own, their data, like those of environmental impact statements, trigger other requirements and provide action-forcing information to the public and the media.

All of which, beyond the upgrade of national pollutant discharge elimination system (NPDES) permits, reduces state water quality standards to a single function: the cleanup of polluted waters. As the clock for passing the 1972 Act wound down, facing the need to preserve a meaningful state role, Senate and House staff developed a highly orchestrated process for states to identify degraded water bodies, prioritize them for cleanup, and calculate those reductions necessary to meet state standards, *total maximum daily loads* (TMDLs).[38] Leaving as little as possible to maneuver, these loads are to be set at levels "necessary" to hit the target, including "seasonal variations" (e.g., low-flow, high-flow), and a "margin of safety" to accommodate scientific uncertainty.[39] Perfect knowledge is not to be the enemy of the good.

Each step in the TMDL process requires EPA review and approval; if disapproved, EPA does them itself.[40] States are then to adopt a planning process that includes TMDL implementation.[41] Not surprisingly at this juncture, this process too is subject to EPA review, initially and on a continuing basis.[42] In sum, this program enables states to do what they have claimed the right to do for decades: clean up pollution. This opportunity granted, it is largely a right to go first, and for degraded waters, and in a direction that improves them, and with federal approvals at every juncture including the process through which they are to implement them on the ground.[43]

What emerges, then, is a CWA in which the federal-state partnership is heavily weighted.[44] EPA dominates the NPDES and related programs, and exercises supervising, checking, and superseding authority throughout the statute. In practice, the exercise of this authority waxes and wanes, and EPA has allowed states extraordinary latitude to adopt weak criteria, lower designated uses, play with mixing zones, juggle risk factors, rely on suspect data sets, establish standards orders of magnitude beyond EPA-recommended levels, fail to apply them, and project load reductions both illusory and unmeasurable.[45] But the statute itself is another matter. Congress wrote what it wrote and for reasons that it made quite clear at the time. It wanted states to continue to play an active role, but it didn't trust them to do the job. It wanted, and enacted, federal control.

As some evidence perhaps that Congress was correct in its assessment, the state-go-first TMDL program lay dormant for a decade and a half until awakened by EPA intervention (stimulated in turn by environmental citizen suits).[46] The process has stumbled forward since, a fact of increasing importance because it holds the key to a form of pollution that has come to dominate the waters of America, and to the nonpoint sources that release it that have remained otherwise untouched for the life of pollution control law in America. Hence, the instant litigation.

II. Nutrients and Numbers

A. *Nutrients*

Nitrogen and phosphorus may be the most underrated pollutants in the world. They are colorless, odorless, and they don't *seem* bad. We say "nutritious" to mean "healthy"; nutrient fertilizers feed crops; important industries manufacture them. These are not criminal acts. Furthermore, the entry of these pollutants into surface and groundwater is for the most part surreptitious, unintended—their impacts are rarely perceived at the start. Unlike heavy metals and other toxins that quickly leave dead test organisms in a jar, nutrients act more like carcinogens, exploding later, often suddenly, to smother a lake or, in the case of river systems not until they reach an estuary like the Gulf of Mexico. Which, of course, makes regulating water quality in the Gulf by that in Illinois a challenge.

34. *Id.*
35. *Id.* at §1313(c)(3).
36. *Id.* at §1313(c)(4).
37. *Id.* at §1315.
38. *Id.* at §1313(d). For a brief history of this provision, see The Clean Water Act TMDL Program, *supra* Author's Note, at 20-24.
39. *Id.* at §1313(d)(1)(C).
40. *Id.* at §1313(d)(2).
41. *Id.* §1313(e).
42. *Id.*
43. Not discussed in this Article are two state-based programs that have played relatively small roles in pollution control. Section 1288 funded an "area wide" waste treatment and planning process that produced reports, but without more fixed requirements went no further. *See* William H. Rodgers, Environmental Law 319-44 (1994). Section 1329 establishes a federal grant program for nonpoint sources that, too, without legal requirements, has made little dent in the problem. *See* David Zaring, *Agriculture, Nonpoint Source Pollution and Regulatory Control: The Clean Water Act's Bleak Present and Future,* 20 Harv. Envtl. L. Rev. 515, 1996. Fortunately, the CWA addresses pollution problems in multiple ways. *See* Houck, *The Regulation of Toxic Substances Under the Clean Water Act*, *supra* Author's Note.
44. Since 1972, the Act has been amended twice in ways that yet strengthen the federal hand. Section 1314(l) set up an EPA-supervised process for the identification of toxic "hot spots," and control strategies to remediate them on an accelerate basis: a more tightly controlled TMDL program on steroids. Section 1342 created a federal permit program for municipal storm sewer discharges in which the states play no role at all.
45. For a view of state gamesmanship in the regulation of dioxin, described by EPA as the most powerful toxin known to man, see Houck, *The Regulation of Toxic Substances Under the Clean Water Act*, *supra* Author's Note, at 10543-55. *See also* NRDC v. EPA, 16 F.3d 1395, 24 ELR 20496 (4th Cir. 1993) (approving state dioxin standards 1,000 times more lax than EPA criteria). For yet more on gaming, see Rodgers, *supra* note 43, at 255-62.
46. *See* The Clean Water Act TMDL Program, *supra* Author's Note, at 55-56.

The mechanisms of nutrient pollution, however, are well-known. Nitrates and phosphates are highly soluble in water.[47] Come the rain, they pass quickly underground or into a stream nearby. Both nitrogen and phosphorous energize aquatic vegetation the same way they energize terrestrial crops, only more acutely. Aquatic plants require fewer nutrients than terrestrial ones to grow, by a magnitude of thousands.[48] One pound of phosphorus can produce from 350 to 700 pounds of green algae.[49] The algae blanket the surface, blocking sunlight and photosynthesis below.[50] As the algae die, they sink to the bottom, sucking oxygen out of the water while they decompose.[51] Benthic life is smothered by their bodies. Without sun, the grasses die. Without oxygen, the fish leave if they can, or die too. Lakes are left with thick caps of iridescent green.

These changes may be irreversible. There is new evidence that nutrient-stressed waters become yet more susceptible to future stresses.[52] Low-oxygen species invade to fill the gap, dominate, and remain. Phosphate-laden lakes require reductions of up to 90% to recover.[53] Meanwhile, public drinking water systems go elsewhere, or to cripplingly expensive treatments. More water supplies have been closed for nitrate pollution than for any other contaminant.[54] They too, like the fauna and flora of the impacted waters, are forced to accept a new status quo.

The yet more insidious effects are toxic. A recent National Research Council report reads:

> Excess nutrients . . . often lead to blooms of cyanobacteria (blue-green algae) that produce toxic substances. Exposure of humans to these toxic substances through contact, inhalation of water spray, or oral ingestion can cause debilitating illness, and even death. . . . Little is known about the transfer of cyanobacterial toxins into the food web, but recent studies indicate that there may be both environmental effects and human health concerns.[55]

More prosaically, dogs die, eight reported over a three-year period in Minnesota alone.[56] They had been swimming in contaminated ponds. Wisconsin reported four human illnesses in a single year.[57] These numbers are doubtless conservative. Nearly all states report significant fish kills. Many have had to close public beaches for health concerns. Infants and children are particularly at risk of contracting "blue baby syndrome," where nitrates disrupt the supply of oxygen throughout the body.[58] They may die as well. Unfortunately, common treatment of nitrates by local water systems produces carcinogens, which then, too, need to be limited or remedied.[59] When it comes to nutrients, abatement in the first place is key.

This abatement is neither difficult to imagine, nor to do. Neither is it, in a world of sophisticated pollution control devices, particularly expensive.[60] Limiting fertilizer application to the amount (and locations) the plants can best use and the soils retain seems an obvious step. Buffer strips and retention ponds along farm streams to catch and use these pollutants is another. Curbing manure runoff from feedlots and chicken factories is not rocket science either. That states with these options at hand and facing threats to their own water resources, soaring costs of water treatment, plunging property values, and lost recreation and tourism are so resistant to cleaning them up is some testament to the power of nutrient dischargers in the equation. All of which plays out in the cases to come.

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47. Devinder K. Bhumbla, West Virginia University Extension Service, *Agriculture Practices and Nitrate Pollution of Water*, http://www.caf.wvu.edu/~forage/nitratepollution/nitrate.htm (last visited Apr. 15, 2014). For a summary of aquatic nutrient impacts generally, see Nutrient Control Actions for Improving Water Quality in the Gulf of Mexico, National Research Council, 2009, at 11-19 [hereinafter Nutrient Control Actions].
48. Defenders of Wildlife, Phosphorous Pollution Policy Issues Package, undated, on file with author.
49. *Id.*
50. *Id.*
51. *Id.*
52. Nutrient Control Actions, *supra* note 47, at 16.
53. Defenders of Wildlife, *supra* note 48. Lakes so impaired include Ohio's largest interior body of water and Lake Erie itself. Indeed, more lakes are nutrient impaired than any other type of water body, and for obvious reasons. *See* Bebe Raupe, *Ohio Begins Multi-Pronged Effort to Resolve Toxic Algae Growth in Grand Lake St. Marys*, Daily Env. Rep. (BNA) Aug. 4, 2010, http://news.bna.com/deln/DELNWB/split_display.adp?fedfid=17592379&vname=dennotallissues&fcn=8&wsn=604258000&fn=17592379&split=0; Tiffany Stecker, "Giant toxic algal blooms could threaten Lake Erie as climate change progresses," E&E Rep., Apr. 2, 2013, http://www.eenews.net/climatewire/2013/04/02/stories/1059978746 ("green tide of blue-green algae enshrouded 230 square miles of Lake Erie's western basin").
54. Bhumbla, *supra* note 47. Indeed groundwater impacts beyond the reach of the CWA are yet more serious in some regions and a direct threat to human health. *See* Stett Holbrook, Farming Communities Facing Crisis Over Nitrate Pollution, Study Says, Food & Env't Reporting Network, Mar. 13, 2012, *available at* http://investigations.nbcnews.com/_news/2012/03/13/10657809-farming-communities-facing-crisis-over-nitrate-pollution-study-says.
55. National Research Council Committee on the Mississippi River and the Clean Water Act, *Mississippi River Water Quality and the Clean Water Act: Progress, Challenges and Opportunities*, 45 (2008), *available at* http://nap.edu/catalog/12051.html [hereinafter NRC 2008]. Cyanobacteria are accompanied by a newer breed, breve-toxins, that are also bioaccumulative and associated with large die-offs of marine organisms including seabirds and manatee. *See* Larry E. Brand & Angela Compton, Rosenstiel School of Marine and Atmospheric Science, Univ. of Miami, Long-Term Increase in *Karenia brevis* Abundance Along the Southwest Florida Coast, *available at* http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2330169/.
56. Minnesota Pollution Control Agency, *What You Should Know About Blue Green Algae*, Water Quality/Surface #1.03 (Dec. 2007), *available at* http://www.pca.state.mn.us/publications/wq-s1-03.pdf; Minnesota Pollution Control Agency, Bulletin, *Some Minnesota Lakes Seeing Toxic Algae Blooms* (Sept. 28, 2004).
57. Sandy Cullen, *Mendota Swim Sickens Woman; Blue-Green Algae Blamed*, Wis. St. J. (July 22, 2008), http://www.madison.com/wsj/home/local/297407 (last visited Apr. 15, 2014).
58. *See* Wheately River Improvement Group, Nitrates and Their Effect on Water Quality, *available at* http://www.wheatleyriver.ca/current-projects/wrig-pilot-nitrate-study/nitrates-and-their-effect-on-water-quality-a-quick-study.
    > Nitrates can interfere with the ability of our red blood cells to carry oxygen. Infants are more a risk of nitrate poisoning than older children or adults. Babies can turn "blue" when there is not enough oxygen being transported by their blood. This "blue baby syndrome" (technically known as methemoglobinemia) is a serious condition that can cause brain damage or death.
59. U.S. EPA, Nutrient Criteria, Technical Guidance Manual, Rivers and Streams, EPA 822-B-00-002 (July 2000).
60. Manuals and guidelines detailing these techniques abound. For EPA's guidance, with source references, see U.S. EPA, National Management Measures to Control Nonpoint Source Pollution From Agriculture, EPA 841-B-03-004, July 2003, http://water.epa.gov/polwaste/nps/agriculture/agmm_index.cfm (last visited Apr. 15, 2014).

B. Numbers

The difference between numerical and narrative standards is quite simple: one works. A speed limit of 65 mph is obvious to any driver, state trooper, and court of law; 70 mph breaks the law. A limit of "unreasonable speed" is obvious to no one and, depending on the circumstances and the resources of the arrested driver, begs an argument to come. How could it be unreasonable if there was no one else on the highway? Or if the driver were Mario Andretti? Or if his congressman calls up and asks for a little understanding? This is why we have speed limits, blood alcohol thresholds, and ambient air quality standards, all expressed in numbers. For things we care about protecting—highway safety, clean air—we assign numerical limits.

The importance of numbers magnifies in environmental decisionmaking because without them, it devolves to case-by-case applications that are extremely resource-intensive, riddled with variables, endlessly arguable, and close to unenforceable until there is a sufficient quantity of dead organisms, which is a bit late, too late in some cases to reverse the alteration of aquatic ecosystems. Setting numerical criteria requires more work up front, but it has a useable end point. Simple tests of grab samples tell the tale. With tens of thousands of polluted waters around the nation, these are real advantages. Without fixed targets, the notion of upgrading NPDES permits with water quality-based limits goes by the wayside, as does an empirical basis for TMDL reductions, as does any hope for full assessment of the nation's waters.[61] And, of course, enforcement. The water quality apparatus of the CWA falls apart.[62]

One would think, then, that states would embrace numerical standards for their effectiveness and ease of implementation. Indeed, that embrace can be found at lower levels of state water agencies where permit issuers and TMDL planners need to confront difficult, favored industries. Numbers provide their best defense. The higher one goes up the chain, however, objective numbers lose their attraction: they constrain agency authority and the exercise of political power. The National Association of Clean Water Agencies has lobbied against them for years. They also diminish the role of science on which earlier state programs were based, with coteries of consultants and academics. In short, the advantage of numbers turns out to be their disadvantage as well; they diminish what people are used to (and proud of) doing. Dischargers resist numbers because they lead to the obligation to abate; states resist them because they provide less discretionary authority in the game.

In the 1980s, as the need to regulate nitrogen and phosphorous became difficult to ignore, EPA developed limited numerical criteria (nitrogen/domestic water supply, phosphorus/estuaries) and urged the states to adopt their own as well. Under pressure to do something, states adopted narrative standards and called it a day. Little further happened until the Gulf dead zone grew to monstrous proportions, the Chesapeake Bay collapsed, and Florida waters turned opaque, smelled bad, and began sprouting covers of slime. Each would ultimately propel litigation, each with a history all its own.

III. Gulf of Mexico

In 2008, the Gulf Restoration Network and other organizations along the Mississippi River filed a petition to EPA requesting that the Agency establish numerical nutrient standards for the states involved, and a TMDL for the full watershed.[63] On the standards issue, it cited CWA §1313(c)(4) directing EPA to issue new standards "promptly" when "necessary" to "meet the requirements of the Act."[64]

The question of what is "necessary" has two legs. One is the nature of the problem; response to a sprained ankle is less urgent than a collapse in the street. The other is whether alternative responses are likely to work, and in this regard, a review of what has already been tried should be persuasive. If threat values are high and the track record is low, it would seem time for something new. We perform this kind of calculus, instinctively, every day.

A. The Dead Zone

The northern Gulf of Mexico is one of the most productive marine ecosystems in the world. One state along its northern tier, Louisiana, hosts one-quarter of America's fishery, one-third of its migratory waterfowl, and one-half of its remaining coastal wetlands.[65] Pelican, frigate birds, terns, whales, sharks, red drum, speckled trout, crabs, shrimp, menhaden, and other species are found here in abundance, as are sea turtles and others at risk of extinction, as are thousands of human beings who make their livings here (including a $2.8 billion fishing industry),[66] an entire cul-

61. Illinois regulations, for example, while providing no numerical standards for nitrogen, state that "only constituents with numeric water quality standards will have TMDLs developed at this time." Section. 4.3, Lower Kaskaskia River Watershed Water Quality Standards (2014).

62. This Article does not argue that narrative standards should be abandoned. At times, they play an important backup role where numerical criteria fail to protect in-stream values, much as water quality standards back up technology standards where they fail to protect designated uses. *See, e.g.*, PUD No. 1 of Jefferson County v. Washington Dep't of Ecology, 511 U.S. 700, 24 ELR 20945 (1994) (upholding denial of water quality certification for discharges that met numerical oxygen standards but threatened salmon runs).

63. Petition for Rulemaking Under the Clean Water Act: Numeric Water Quality Standards for Nitrogen and Phosphorus and TMDLs for the Mississippi River and the Gulf of Mexico [hereinafter Petition].

64. *See also* Raymond Profitt Found. v. U.S. Environmental Protection Agency, 930 F. Supp. 1088, 1103-04, 26 ELR 21601 (E.D. Pa. 1996).

65. *See* Oliver A. Houck, *Land Loss in Coast Louisiana, Causes, Consequences, and Remedies*, 58 Tul. L. Rev. 3, 82 (1983) and sources cited therein; for more data, see recent Integrated Ecosystem Restoration and Hurricane Protection: Louisiana's Comprehensive Master Plan for a Sustainable Coast (2012), *available at* http://www.lacpra.org/assets/docs/2012%20Master%20Plan/Final%20Plan/2012%20Coastal%20Master%20Plan.pdf [hereinafter Louisiana Master Plan].

66. Coastal Birds, Amphibians, and Mammals at Risk From Oil Spill. Nola.com, *available at* http://media.nola.com/news_impact/other/wildlife-at-risk-oil-spill.pdf; Moving Forward on Gulf Hypoxia Annual Report 2010. EPA Hypoxia Task Force, 5, *available at* http://water.epa.gov/type/water-

ture dependent directly and indirectly on the quality of Gulf waters. It has been a story of sustainability for the natural and human world lasting centuries, for so long as water quality was maintained.

The Gulf today, near the mouth of the Mississippi River, now hosts the largest "dead zone" of anoxic water in North America, indeed the second largest in the world.[67] The size of the zone fluctuates with inflows from the Mississippi River (and its major distributary, the Atchafalaya), but has exceeded 20,000 square kilometers, roughly the size of Massachusetts, double that of the entire Chesapeake Bay.[68] Fish and shrimp are not to be found. Benthic life has died. Local fishing communities are under stress.

The causes of the Gulf dead zone are no longer in contest. Unprecedented levels of nitrogen and phosphorous have overloaded the system with the classic effects, orders of magnitude larger. Some 31 upstream states discharge into the Mississippi River,[69] but six of them, farm states every one, account for over one-half the nitrates and nearly two-thirds of the phosphorous.[70] Nor are the particular sources of these pollutants a mystery; some 89% are nonpoint dischargers, primarily, indeed overwhelmingly, agriculture. The correlation between the use of chemical fertilizers upstream and the dead zone downstream has been linear and direct.[71] All of which present an acid test for a water quality standards program, beginning with the standards themselves.

B. *The Response*

State address of nutrients in the Mississippi Watershed has been slow and tentative. Until recently, many had no standards for nitrogen and phosphorus at all. Once promulgated, under heavy EPA pressure, the standards were uniformly narrative,[72] which were easy enough to draft, but afforded little traction in their implementation. Connection to the Gulf dead zone was at best remote. It was hundreds of miles away.

The federal response to the dead zone also began tentatively. In 1988, EPA launched a Gulf of Mexico Program to promote "collaborative" actions "consistent with the economic well-being of the region."[73] As might be expected, the program convened meetings, but made little progress on hypoxia. In 1994, environmental groups petitioned EPA to develop a more focused strategy for the dead zone.[74] While denying the petition, the Agency committed to develop "on the ground" nutrient reduction efforts with "set goals" by 1997.[75] Neither occurred. Instead, EPA formed a Hypoxia Task Force that, rather than specific targets or deadlines, agreed to adopt an "action plan" by 1999 (actually completed, 2011).[76] So far, 10 years following the first petition, there was no plan, no fixed goal, and no viable standards to get there. But things were about to change.

In February 1998, the Clinton Administration issued a Clean Water Action Plan[77] that seemed to bite the bullet. Inter alia, the plan found *numeric* nutrient water criteria to be necessary and directed EPA to develop, within two years, "numerical ranges for acceptable levels of nutrients (i.e., nitrogen and phosphorus) for all water body types and ecoregions" in the country.[78] This done, by 2003, states were to adopt water quality standards for these nutrients, and where they did not, then EPA would do so instead. EPA followed the plan with its own National Nutrient Strategy, declaring that it would assist states in developing and implementing numerical standards, and, where necessary, the Agency would develop them itself.[79]

In 2001, EPA extended the state deadline to the end of 2004 for the adoption of "either numeric criteria" or "means to translate narrative criteria to a quantified endpoint," still threatening to act if the states did not.[80] That same year, a joint EPA-state Nutrient Task Force, which had relieved the Gulf of Mexico Program of this portfolio, announced its goal of reducing the Gulf dead zone to 5,000 square kilometers by 2015.[81] No implementing measures, however, were required. Per the national nutrient strategy, EPA also published eco-regional numerical

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sheds/named/msbasin/upload/Hypoxia_Task_Force_Annual_Report_2010.pdf.

67. Mindy Selman et al., *Eutrophication and Hypoxia in Coastal Areas: A Global Assessment of the State of Knowledge*, World Resources Institute Policy Note (Mar. 2008); Nancy N. Rabalais et al., *Beyond Science Into Policy: Gulf of Mexico Hypoxia and the Mississippi River*, 52 BioScience 129-42 (2002). *See also* home page, Hypoxia in the Northern Gulf of Mexico, http://www.gulfhypoxia.net.
68. Overview—What Is Hypoxia?, Hypoxia in the Northern Gulf of Mexico, http://www.gulfhypoxia.net.
69. National Research Council. Nutrient Control Actions for Improving Water Quality in the Mississippi River Basin and Northern Gulf of Mexico 11 (Washington, D.C.: The National Academies Press, 2009) [hereinafter NRC 2009].
70. *Id.* at 14.
71. *See* Figure 8 in R. Eugene Turner & Nancy N. Rabalais, *Changes in the Mississippi River This Century: Implications for Coastal Food Webs*, 41 BioScience 140-47 (1991).
72. National Strategy for the Development of Regional Nutrient Criteria, EPA (June 1998) 2 [hereinafter EPA National Strategy].
73. U.S. EPA, Gulf of Mexico Program, http://www.epa.gov/gmpo/about/wahtisgmp.html [hereinafter EPA Gulf Program].
74. Petition, *supra* note 63.
75. Final Meeting Summary for the First Meeting of the Mississippi River/Gulf of Mexico Watershed Nutrient Task Force 6 (1997), http://www.epa.gov/msbasin/taskforce/summaries/1stsummary.htm (last visited Apr. 15, 2014).
76. The federal Harmful Algal Bloom and Hypoxia Research and Control Act of 1998 (HABHRCA), Pub. L. No. 105-383, was enacted on Nov. 13, 1998, established a federal hypoxia Task Force, provided for "assessments" of the consequences of hypoxia, and required a plan for controlling hypoxia by March 30, 2000. 16 U.S.C. §1451. The success of this provision is best demonstrated by the fact that the act was reauthorized in 2004, four years after the "plan" was due, this time calling for the development of a "plan" at a later date. Pub. L. No. 108-456, 118 Stat. 3633.
77. EPA Clean Water Act Plan, *available at* http://www2.epa.gov/aboutepa/clean-water-action-plan [hereinafter EPA CWAP].
78. *Id.*
79. U.S. EPA, National Strategy for the Development of Regional Nutrient Criteria, 63 Fed. Reg. 34648, 34648-49 (June 25, 1998) [hereinafter EPA National Strategy in the *Federal Register*].
80. U.S. EPA, Nutrient Criteria Development, 66 Fed. Reg. 1671, 1673 (Jan. 9, 2001) [hereinafter EPA Nutrient Criteria Development].
81. Gulf Hypoxia Action Plan 2008 9, *available at* http://water.epa.gov/type/watersheds/named/msbasin/upload/2008_8_28_msbasin_ghap2008_update082608.pdf [hereinafter Gulf Hypoxia Action Plan 2008].

criteria as state guides,[82] taken further by several EPA regional publications.[83] To little avail. No such state standards emerged.

Two years later, environmental organizations, seeing little progress, filed a second petition for direct action by EPA, again denied.[84] The Agency would instead "work with the states" towards numeric criteria.[85] In the years that followed, the dead zone did not decrease. Nutrient loadings did not decrease either. They actually increased.

The year 2004, EPA's stated deadline for new state criteria, came and went with no state in America having adopted numerical nutrient criteria for all waters, and no state along the Mississippi having developed them for *any* waters. In the years to follow, the Agency, its Inspector General,[86] other scientific bodies, and even the Government Accountability Office[87] produced reports documenting the Gulf crisis and recommending swift action. In 2008, alarmed by the escalating nature of the dead zone problem, EPA's Science Advisory Board concluded, "nutrients should be reduced as soon as possible before even larger nutrient reductions are required."[88]

Also in 2008, a science committee of the National Research Council declared that "a more aggressive role" for EPA was "crucial "to improving water quality in the northern Gulf."[89] It went on: "Both *numerical federal quality criteria and state water quality standards are essential* to reducing nutrient inputs into the river, and achieving water quality objectives along the Mississippi River and for the Gulf of Mexico."[90] It concluded by recommending a TMDL for the Mississippi Watershed, as a means of assessing and allocating the reductions necessary for recovery.[91]

That same year, seeing the same lack of progress that everyone else seemed to, the environmental petition in this case, the third of its kind, was filed. It came 20 years after EPA's first collaborative effort with states to address the problem. It was still relying on collaboration, with no end in sight.

82. U.S. EPA, *Summary Table for the Nutrient Criteria Documents* (2002), *available at* http://water.epa.gov/scitech/swguidance/standards/criteria/nutrients/upload/2007_09_27_criteria_nutrient_ecoregions_sumtable.pdf.
83. Ambient Water Quality Criteria Recommendations: Information Supporting the Development of State and Tribal Nutrient Criteria, Rivers and Streams in Nutrient Ecoregion IX, EPA 822-B-00-019 (Dec. 2000) [hereinafter EPA WQS Criteria Recommendations].
84. Plaintiffs' Summary Judgment Memo at 6.
85. *Id.*
86. U.S. EPA, Office of Inspector General, Total Maximum Daily Load Program Needs Better Data and Measures to Demonstrate Environmental Results, Report No. 2007-P-00036 22 (Wash., D.C.: Sept. 19, 2007), *available at* http://www.epa.gov/oig/reports/2007/20070919-2007-P-00036.pdf.
87. U.S. Gov. Accountability Office, Improved EPA Guidance and Support Can Help States Develop Standards That Better Target Cleanup Efforts, 37-39 (2003).
88. U.S. EPA, Science Advisory Board, *Hypoxia in the Northern Gulf of Mexico*, 52 (2008), *available at* http://yosemite.epa.gov/sab/sabproduct.nsf/C3D2F27094E03F90852573B800601D93/$File/EPA-SAB-08-003complete.unsigned.pdf.
89. NRC 2008, *supra* note 55, at 137.
90. *Id.* (emphasis added).
91. *Id.*

C. The Litigation

EPA held the petition for three years, before finally denying it.[92] The denial was unusual because it admitted, indeed restated, the petition's central elements showing causation, harm, and need. Nutrient loadings were responsible for "harmful algae blooms, reduced spawning grounds and nursery habitats, fish kills, and oxygen-starved hypoxic or 'dead zones'"; they posed serious public health threats through cyanobacteria and "disinfectant byproducts" from water treatment; resulting economic harms were also "considerable"; and reducing nutrient pollution "should be a high priority" for the Agency's water programs.[93] This said, the Agency found the promulgation of federal standards to be "a daunting management challenge," and opted to pursue a more "effective and sustainable" strategy based on, as one might divine from earlier approaches, "ongoing collaboration" with state agencies.[94] Keeping the option open, however, perhaps as leverage in this collaboration, the Agency explicitly stated that it was *not* finding that numerical nutrient standards were *not* necessary.[95] In effect, EPA was ducking the question. From the group's own statements alone it could not deny that numbers were necessary; it simply did not want to do them. In March 2012, the Gulf Restoration Network et al. filed suit.[96]

The first phase of the case did not litigate the question of "necessity" but, rather, the obligation of EPA to make a necessity call. Echoes of *Massachusetts v. EPA*,[97] rejecting the Agency's similar refusal to make the call on carbon emissions were clear, and following the Supreme Court's lead and reasoning, a district court of the Eastern District of Louisiana did the same.[98] That decision is now on appeal, but one is hard pressed to distinguish this recent precedent. No student of the U.S. Court of Appeals for the Fifth Circuit would predict an outcome favoring the environment on any case before it, but this decision, procedural as it is, should hold.

The district court went further, however, to articulate a high level of deference to EPA's judgment, should the Agency come up with a negative finding.[99] Albeit dicta, this intimation of outcome bears closer examination. The court acknowledges, as it must, that judicial review of the decision is appropriate.[100] EPA's discretion here is bounded by the phrase "to meet the requirements of this act," which requirements include water quality standards for pollutants such as nitrogen and phosphorous, which EPA and other relevant institutions have said, unambiguously, should be numerical for the past 15 years. One could logically take them at their word. As for leaving

92. The Petition was filed in July 2008 and was denied in July 2011.
93. Plaintiffs' Motion for Summary Judgment at 2, 17.
94. *Id.* at 4, 33.
95. *Id.* at 17.
96. *Id.* Gulf Restoration Network v. Jackson, CIV. A. No. 12-677, 2013 WL 5328547, 43 ELR 20218 (E.D. La. Sept. 20, 2013) at 7.
97. 549 U.S. 497, 37 ELR 20075 (2007).
98. *Gulf Restoration Network*, 2013 WL 5328547.
99. *Id.* at 6.
100. *Id.* at 4.

their development to further collaboration with the states, the not-even-glacial movement toward them in the Mississippi Watershed can be taken at its word as well. Were review of an EPA negative determination based on this record, it could easily be reversed.

If, on the other hand, EPA is allowed to include administrative convenience and potential future cooperation with the states as germane to its negative finding, then it becomes an almost unreviewable call. Rulemaking is always burdensome, and state cooperation is always ideal.[101] In this regard, however, *Massachusetts* made clear that the Agency's discretion was not "a roving license to ignore the statutory text."[102] EPA might well argue of course that the statutory text cites state "primacy" as one of its policies, but we have seen in this Article what an artifact that statement has been for the last 40 years.[103] With respect to the statutory text at issue, Congress was explicit in requiring criteria and standards *adequate* to protect the nation's waters.[104] EPA would develop model criteria and states had first crack at incorporating them, subject to a presumption in favor of EPA's numbers and to EPA review, but they had no right to ignore them. This is the operative context. When states do not act, EPA acts instead. Its obligation is not discretionary in the nature of an enforcement decision; the Agency is not suing or acting against anyone, it is simply performing the task Congress prescribed in order to fill the hole.

Which leaves open the final question, unaddressed by the trial court, the TMDL claim. Its resolution may well be settled by an appeal now pending in the Chesapeake Bay litigation, as will be seen below, but an observation as to EPA's authority to take such a watershed approach may be timely. On its face, §1313(d) requires states to establish TMDLs for their impaired waters.[105] Clearly, the Gulf is impaired, and it is so (for the most part) in Louisiana. Equally clearly, it would be fatuous, indeed impossible, for Louisiana to make in-state nutrient reductions sufficient to clean up the dead zone, or to allocate out-of-state reductions at all. Louisiana could close the state down and still have a world-leading dead zone. But this does not mean that a TMDL is not called for. When a state fails to act—and no reasons for not acting are specified—case law is clear that EPA *must*,[106] and unlike the states, EPA actually *can* act, by apportioning loads among states to arrive at the necessary target.[107] Mississippi Watershed states are free to cooperate in this process, as sister states have on the Chesapeake, or to obstruct it, or to challenge its allocations in court, but their opposition should no more prevent EPA from doing *its* duty as their refusal to set numerical nutrient criteria should. In both cases, EPA is mandated to step in. When the Agency does, it is fulfilling, not frustrating, the CWA and its patented design for cleaning up impaired waters. Which is, of course, the overarching goal of the Act.

D. Epilogue

Outside the courtroom, the issue burns on. EPA, putting as brave a face as it can on state performance, has opened a website on State Development of Numeric Criteria for Nitrogen and Phosphorus Pollution projecting optimistic expectations based on milestones submitted by the states.[108] The bare facts, however, are more daunting. As of April 1, 2014, 10 years after EPA's projection for the completion of numeric criteria for all states, only one, Hawaii, had done it.[109] Only three states had numeric criteria for two or more water body types, and only three more had them for even one body type.[110] Seventeen states had numbers for a scattering of water segments (primarily lakes and ponds).[111] Twenty six states, a majority, had *no* numbers for waters at all, 13 of them in the Mississippi Watershed.[112] These are EPA data based on state submissions. They are what they are.

From these same submissions, state records and state §305(b) reports, environmental plaintiffs have submitted their own analysis of state performance, yet more sobering.[113] Considering the top five contributors to the Gulf dead zone alone, *Illinois* has not yet developed even a work plan for nutrient criteria for streams, which are of course where nitrogen and phosphorous start their journeys downstream; indeed, the state no longer identifies phosphorus as a cause of impairment at all.[114] *Iowa*, ranking number two for nitrogen and four for phosphorus, has no work plan to develop them for *any* class of waters, and has recently determined that numeric criteria are "not necessary at this time" even for the protection of recreational swimming.[115] *Indiana,* number three for nitrogen-to-the-Gulf, has "apparently abandoned efforts" to develop numerical criteria, and its proposal for phosphorus "is now eight months overdue with no indication that a proposal is imminent."[116] *Missouri* shows no intent to develop numerical criteria for any of its waters, the last of its work group meetings held in late

101. Indeed, were state cooperation a controlling factor, it would eliminate EPA's duty under §1313(c)(4). Congress expected that some states would not cooperate, and directed EPA to then step in.
102. *Massachusetts*, 549 U.S. 533.
103. Nonetheless, the trial court was sufficiently impressed by it to quote §1251(b) verbatim, *in bold case*, as its rationale for deferring to potential EPA negative finding. *Gulf Restoration Network*, 2013 WL 5328547.
104. 33 U.S.C.A. §1313(a)-(c) (water quality standards); §1251(a) (CWA goals).
105. 33 U.S.C.A. §1313(d) (West).
106. *See* Alaska Ctr. for the Envt'l v. Reilly, 762 F. Supp. 1422, 21 ELR 21305 (W.D. Wash. 1991); Sierra Club v. Hankinson, 1996 WL 534909, 27 ELR 20280 (N.D. Ga. 1996).
107. This analysis is also supported by the exercise of state antidegradation requirements. See discussion of Chesapeake Bay TMDL, *infra*.
108. State Development of Numeric Criteria for Nitrogen and Phosphorus Pollution, U.S. EPA, *available at* http://cfpub.epa.gov/wqsits/nnc-development/.
109. *Id.*
110. *Id.*
111. *Id.*
112. NRC 2008, *supra* 55, at 18, tbl. 1.
113. *Id.* at 63-68.
114. Lack of State Progress in Developing Numeric Nutrient Criteria to Control Nitrogen and Phosphorus Pollution Under the Clean Water Act, Mississippi River Collaborative 2 (Feb. 13, 2014) [hereinafter Lack of State Progress].
115. *Id.*; *see also* Amanda Peterka, *Efforts to Address Agricultural Runoff Fail to Improve Iowa's Lakes Study* (Jan. 11, 2013), *available at* http://www.eenews.net/Greewire/print/2013/01/11/23.
116. Lack of State Progress, *supra* note 114, at 2.

2011.[117] *Kentucky* has not only failed to submit numerical criteria (which it had targeted as a goal back in 2003), but has recently stated that such criteria "may not be the most effective approach to addressing nutrient challenges".[118] These five states alone contribute 54% of the nutrient loadings in the Gulf of Mexico.[119] At this point, one is able to draw one's own conclusions on the chances of nutrient reductions through numeric water quality standards within the foreseeable future.

Iowa captures the situation upstream as well as any. This is a state whose drinking water systems have been supremely challenged by nitrates, closing over one dozen water sources, imposing multimillion dollar costs on the public for additional treatment.[120] There is no contest that the pollutants come overwhelmingly from agricultural operations. A study released in 2003 by Iowa State researchers (one may imagine the courage it took to undertake such a project in a state institution) found that 60% of monitored streams had "poor" or "very poor" water quality, laden with sediments and phosphorus.[121] There was, further, no evidence that this quality had improved since 1999.[122] Meanwhile, Iowa has submitted a new plan to EPA with no numeric nutrient criteria and reductions based on "voluntary conservation efforts."[123] EPA has replied, quite gingerly, that the plan "does not reflect EPA's current thinking about numeric criteria development."[124] For its part, the Iowa Farm Bureau Federation praised the plan and lambasted the very mention of numerical limits as "arbitrary" and "flawed."[125] Besides, the Bureau pointed out, numbers would label "partners" as "polluters."[126]

Meanwhile the Gulf dead zone is growing. Its average size for the past five years is double that targeted by the Gulf Nutrient Task Force in 2001, reaffirmed in 2008.[127] It soared again in 2013, and bodes to set a new record with the high water expected in Spring 2014.[128] The legal question remains, given these facts, and given EPA's consistent position that numerical criteria are needed to address the problem, whether an EPA finding of "necessity" is itself necessary under CWA §1313(c)(4). A related question is, if not, then when would one ever be? There is something about doing the same thing over and over again and expecting different results. Albert Einstein called it insanity.[129]

IV. Florida

In July 2008, the Florida Wildlife Federation and other state environmental organizations filed suit against EPA to compel it to adopt numerical nutrient standards for state waters.[130] This litigation is but the latest chapter of lawsuits over Florida water quality dating back decades, and the issues, politics, parties, and their positions have scarcely changed.

Florida waters are a legend, two legends really, one above ground and the other running below through limestone caves to surface suddenly in springs, form creeks and rivers, disappear as suddenly, to reappear yet again. This is the land and waterscape of The Yearling, and no one visits Juniper Creek or Wakulla Springs and soon forgets them. South towards Orlando, the celebrated "Sea of Grass" begins, running like water off a table into the Kissimmee River, Lake Okeechobee, and finally into the vast wetlands of south Florida including the Everglades, home to hundreds of endemic species, some of them endangered, all of them dependent for survival on water and its high quality. These waters belong to the state, but perhaps more than any other waters under the jurisdiction of the CWA, they also belong to the nation. If the Act is serious about its goals, ground zero for "restore and maintain" is here.

The difficulty has been in getting Florida to make restore and maintain happen.

A. *The Everglades*

The past is prologue, and Florida's war over nutrient standards began in the 1980s with the plummeting water quality in the Everglades National Park. This was, in turn, but the latest chapter in Florida's war against the Everglades that started in the 1840s with the ambition to turn these wetlands into an agricultural paradise. After one century

117. *Id.* at 2-3.
118. Lack of State Progress, *supra* note 114, at 19.
119. *See* NRC 2009, *supra* note 69, at 17, fig. 5.
120. Lack of State Progress, *supra* note 114, at 3, 11-12; *see also* Ralph Rosenberg, *Water Problem "Self-Evident," But Will State Officials Act?*, Iowa Environmental Council (Jan. 7, 2013), http://iaenvironment.wordpress.com/2013/01/07/rosenberg-water-problem-self-evident-but-will-state-officials-act/ (last visited Apr. 15, 2014).
121. Peterka, *supra* note 115.
122. *Id.*
123. *Id.*
124. *Id.*
125. *Id.*
126. *Id.* Perhaps farm nutrient dischargers would be satisfied by a term taken from the political arena: "major donors."
127. Lack of State Progress, *supra* note 114, at 4.
128. *Id.* One of the most bizarre responses to the dead zone is that of Louisiana, which has jointed others in opposing, inter alia, numeric nutrient criteria. The dead zone is not even mentioned in the state's Master Plan for restoring its shrinking coast, until a "strategy" was teased out by the Gulf Restoration Network lawsuit. *See* Louisiana Master Plan, *supra* note 65; *see also* Mark Schleifstein, *New Plan Tackles Release of Nutrients: Diversion to Cut Runoff Into Rivers*, Times-Picayune, Feb. 16, 2014. Prepared in haste, the strategy calls for the ubiquitous "cooperation with other states," and for river diversions (already planned for other reasons) to siphon nutrient laden waters into the marsh instead, where unfortunately overloads of nitrogen and phosphorous could have the same grow-wild-and-die effect they have on phytoplankton. *See* Robert S. Eshelman, *Oceans: Farm Runoff Is Accelerating Demise of Protective Coastal Salt Marshes—Study*, E&E Publ., LLC (Oct. 23, 2012), http://www.eenews.net/stories/1059971575 (last visited Apr. 15, 2014). Although the diversions would have an infinitesimal effect on reducing the dead zone, the state also contemplates selling credits to northern states in lieu of abatement. Schleifstein, *supra* note 128. One point in this strategy deserves further mention, however. The state denies any obligation towards the dead zone because "[t]hat responsibility lies solely with the federal government and states that input such nutrients." *Id.* (quoting the state coastal program director). With which the Gulf Restoration Network might in part agree. The GRN proposal and the most obvious way to exercise that federal responsibility is a watershed TMDL, which, by its position in the lawsuit, Louisiana also apparently opposes.
129. Albert Einstein, BrainyQuote.com, http://www.brainyquote.com/quotes/quotes/a/alberteins133991.html (last visited Apr. 15, 2014).
130. Florida Wildlife Fed'n, Inc. v. Jackson, No. 4:08CV324-RHWCS, 2009 WL 5217062 (N.D. Fla. Dec. 30, 2009).

of federal effort, massive pumps and canals managed to siphon water off to the coast and drain the northern half of the area entirely for what is now known as the Everglades Agricultural Area, home to a sugar industry that became an icon of its own. The area's peat soil is poor in nutrients and requires massive doses of phosphorus-based fertilizers, whose runoff began to turn Okeechobee, yet another icon, into its own dead zone. The runoff had to be funneled somewhere else, and the choice was into the Park. The results were spectacular. Within a few years, invasive vegetation was smothering lakes and ponds, while wildlife populations crashed, including a 90% decline in wading birds.[131] The public woke up.

In 1973, the Florida Legislature issued a report concluding that agricultural practices were the cause of nutrient pollution in Lake Okeechobee, doorway to the Glades.[132] The South Florida Water Management District, the region's water engineering arm, was tasked with leading a cleanup. Nothing of the sort happened. Fourteen years later, the legislature followed with another law, acronym SWIM, which required a plan to end nutrient pollution of the lake within five years.[133] Nothing of the sort happened, again. Following which, in an unprecedented action, the U.S. Attorney for the Southern District of Florida filed a lawsuit in state court against the Water Management District to protect the Everglades Park and an adjacent federal wildlife refuge, alleging violations of the SWIM Act and the state narrative nutrient standard ("not adversely affect indigenous vegetation or wildlife").[134] Tellingly, the suit sought to enjoin the use of this standard for its imprecision, and to require its conversion to a numerical standard instead.

All hell broke loose. The District retained a Washington, D.C. firm (in the words of a former *Washington Post* reporter-turned Everglades historian, "litigious carpet-bombers") that over the next three years tallied $5 million in attorney's fees, leading to a press conference by the Florida Attorney General threatening to challenge the bill in court.[135] The District, meanwhile, refused to consider settlement and it became clear to some exactly who was forcing its hand. Quoting from the same history, "Florida was never going to get serious about protecting the Everglades so long as Big Sugar was calling the shots, because even the best-intentioned Florida politicians went wobbly with sugar."[136]

Not all politicians, however. In 1992, incoming governor Lawton Chiles entered into a consent decree with the federal government that established a target of 80% phosphorus reductions, a process for developing new water quality standards, and for limiting discharges from the Agricultural Area, which the sugar growers had resisted so strongly.[137] A grower's lawsuit to overturn the consent decree failed. That same year, the Florida Legislature, also under new leadership, passed the Everglades Forever Act (EFA), which mirrored the requirements of the consent decree, adding a deadline: the Everglades were to meet standards by 2006.[138] On the way getting there, Florida was to translate its narrative phosphorous standard to a numeric one by 2003, and if it did not, an EPA-recommended criterion of 10 parts per billion (ppb) (small amounts of phosphorous are that powerful) would apply. At last, Florida would have a number.

Unfortunately, the Florida Department of Environmental Protection (FDEP) took the deadline as a license to continue polluting *until* 2006, a 13-year grace period.[139] Challenged by environmentalists, EPA deferred to the state and approved the extension, and was upheld on appeal.[140] When by 2003 it became apparent that the state would miss the 2006 cleanup deadline, the EFA was amended to extend the date another *10* years, to 2016, and to allow dischargers to exceed the 10 ppb limit under a permissive set of conditions.[141] Once again, EPA found these measures consistent with the CWA. The Everglade's Miccosukee Tribe of Indians filed suit, and won a different decision this time.[142] Neither the state nor federal government had lived up to its role.

In an opinion documenting unmet promises and deadlines, the court found Florida in "consistent disregard for the requirements of the CWA in the Everglades,"[143] and ordered EPA to take back the NPDES permitting program. Two years later, the court reaffirmed: "The permits cannot go through the state system, for they will be forestalled and they will not comply."[144] Turning to the state's prolonged extensions, the court found them, too, essentially an "avoidance mechanism" inconsistent with the CWA.[145]

131. John J. Fumero, Everglades Ecosystem Restoration: A Watershed Approach by the Legislature, Fla. B.J., Oct. 2000, at 58.
132. David G. Guest, *"This Time for Sure"—A Politician and Legal History of Water Control Projects in Lake Okeechobee and the Everglades*, 13 St. Thomas L. Rev. 645, 661 (2001).
133. *Id.* at 662.
134. United States v. S. Florida Water Mgmt. Dist., 922 F.2d 704, 707, 21 ELR 20774 (11th Cir. 1991).
135. Michael Grunwald, The Swamp: The Everglades, Florida, and the Politics of Paradise 288 (2006).
136. *Id.* at 289.
137. United States v. S. Florida Water Mgmt. Dist., 847 F. Supp. 1567, 1570 (S.D. Fla. 1992), *aff'd in part, rev'd in part*, 28 F.3d 1563, 24 ELR 21397 (11th Cir. 1994).
138. Fla. Stat. Ann. §373.4592 (1994) (amended 2013).
139. Miccosukee Tribe of Indians of Florida v. United States, No. 95-0533-CIV-Davis, 1998 WL 1805539, at *7 (S.D. Fla. Sept. 14, 1998).
140. Miccosukee Tribe of Indians of Florida v. United States, 04-21448-CIV, 2006 WL 648055, at 6 (S.D. Fla. Feb. 16, 2006).
141. Fla. Stat. Ann. §373.4592 (West) (2003) (amended 2013).
142. Miccosukee Tribe of Indians of Florida v. United States, 04-21448-CIV, 2008 WL 2967654, at 1 (S.D. Fla. July 29, 2008).
143. "Because the State of Florida has violated the Summary Judgment Order and evidenced a consistent disregard for the requirements of the CWA in the Everglades Protection Area, it is essential that responsibility for CWA compliance through the issuance of NPDES permits be returned to the EPA." Miccosukee Tribe of Indians of Florida v. United States, 706 F. Supp. 2d 1296, 1313 (S.D. Fla. 2010), *modified in part*, No. 04-21448-CIV, 2011 WL 1624977 (S.D. Fla. Apr. 26, 2011).
144. *Miccosukee* (2011), *supra* note 143, at 29.
145. *Miccosukee* (2008), *supra* note 142, at 26. In an unrelated but parallel development, in 1999, an Escambia County Special Grand Jury on Air and Water issued a detailed, 120-page report finding both Florida pollution control programs in violation of law. Among the reasons were extensive loopholes for major dischargers, extensions of compliance deadlines for up to a decade, and the dismissal of state personnel who had attempted to enforce the law. A subsequent Sierra Club petition asking EPA to revoke state delegation, based largely on the Grand Jury findings, was denied. *See* Report of the

In its subsequent opinion, the court concluded with a wider plea:

> The roots of the ongoing and enduring Everglades litigation originate from a period of over one-quarter century ago. This represents a serious need for the parties in this action—as well as non-parties with substantial interests in the future of the Everglades—to stop delaying. It is now, and has been for a while, time to take concrete and substantial progress towards preserving the Everglades before this national treasure is permanently destroyed.[146]

This ruling came in 2011. Since that time, a combination of fixed reduction goals, numerical standards, obligatory best management plans (from a suite of options such as fertilizer application practices), and water storage areas—none of them rocket science, none of them requiring detailed field work—has begun to turn the tide. There is hope for the Everglades. With the will at the state level, it's not that hard. Without that will, the corollary is also true.[147]

B. Nutrient Standards

As with the Everglades, Florida's war over nutrient controls across the state began over numerical criteria. The hour for them was late. Scientists had been documenting increased levels across the state since the 1970s, in the state's own words a "significant threat to drinking water sources and recreational areas" with the usual late-stage indicators: toxic blue green algae, floating bodies, cyanotoxins in public fountains.[148] One Florida lake, Thonotosassa, experienced a kill of 25 million fish, a national record.[149] Wakulla Springs turned opaque, the glass-bottom boats tied at the dock or retired. As a reviewing court would later observe: "By 1998 there were good grounds to conclude that narrative nutrient criteria were not working—not in Florida, and not in other states."[150] Even the FDEP agreed, at least at first. But not, perhaps, the most important sectors of all.

Unlike phosphorus in the Everglades affecting essentially one sector and one region, statewide numerical standards shook the tree of every discharger in the state from cattle ranchers to fruit farmers, mining companies, fertilizer manufacturers, agro-chemicals, timber, pulp and paper, power plants, and sewage treatment facilities, some two-dozen industries and their lobbies at one point in the litigation. The last thing in the world they wanted was numbers, which if nothing else should signify how critical a role numbers play. As the EPA Assistant Administrator for Water would later write:

> [T]he barriers to effective implementation associated with narrative nutrient criteria in Florida, *such as the need for numerous, highly technical site-specific analyses* prior to the development of water quality-based effluent limitations in NPDES permits and TMDLs strongly support the need in this case for numeric nutrient criteria to effectively protect designated uses and prevent impairments.[151]

Possibly due to its earlier experience with phosphorus, in 2001, FDEP began working with EPA encouragement on numerical nutrient standards. In 2003, it projected their completion in 2004.[152] EPA approved the schedule, but noted that time was of the essence and reserved its right to intervene. As 2004 approached, FDEP moved the schedule back to 2007.[153] Then to 2010. EPA, deferring again as it had with the Everglades, approved the new target, but in 2008, FDEP proposed going to 2014, "barring significant dissent or administrative challenge."[154] There was no end point. The best one could hope for was six more years, barring "dissent" (and dissent was already swarming), more than 15 years after EPA first said Florida's narrative criteria were not working and 10 years after Florida's first self-imposed deadline. It was the Everglades saga, redux, something was getting in the way.

That same year, 2008, the Florida Wildlife Federation et al., witnessing the same scenario, filed suit against EPA to make a "necessity determination" and promulgate numerical standards on its own.[155] This time, EPA agreed. The following year, the Agency made the determination, leaving the option open for the state to adopt them itself, and one year later, the state not having acted, entered into a consent decree (strongly opposed by industrial and municipal parties) to set numbers for interior waters within one year.[156] Which the Agency then did. Upon which a coalition of

Special Grand Jury on Air and Water Quality 77 (Fla. Escambia County Ct. 1999).

146. *Id.*

147. Another significant chapter in the Everglades/phosphorus saga continues as this Article appears, primed by a CWA case filed by environmentalists in 2002 to regulate water pumped out of the Everglades Agricultural Area and back into Lake Okeechobee through state-managed pumps and canals. *See* Friends of Everglades v. S. Florida Water Mgmt. Dist., 570 F.3d 1210, 1214 (11th Cir. 2009). The return water came back laden with fertilizers that contaminated public drinking water supplies as far away as Fort Meyers and Miami. The issue at hand, point source pollution, seemed obvious but soon thereafter EPA announced a new policy that exempted the pumping from CWA jurisdiction under a rather imaginative "unified waters" rationale, essentially that all waters of the US are one water, hence cannot not pollute each other. The "unified waters" rule has led a tangled legal journey, but in March 2014, in a case that consolidated complaints from nine states, 12 citizen groups, and the Province of Manitoba, a federal court in the Southern District of New York struck it down, over arguments based, inter alia, on "state primacy." *See* Catskill Mountain Chapter of Trust Unlimited v. EPA, Nos. 08-CV5606 (KMK), 08-CV 8430 (KMK), 44 ELR 20068 (S.D.N.Y. Mar. 28, 2014). Appeals will follow of course, but in the meantime, the case provides yet another illustration of the lengths to which both Florida and EPA have gone to avoid regulating nutrient pollution in South Florida.

148. Florida Wildlife Fed'n, Inc. (FWF) v. Jackson, 853 F. Supp. 2d 1138, 1145, 42 ELR 20048 (N.D. Fla. 2012).

149. Lake Thonotosassa Surface Improvement and Management (SWIM) Plan, February 2003, *available at* http://nsbkvweb01.swfwmd.state.fl.us/documents/plans/lake_thonotosassa_2003.pdf.

150. *FWF*, 853 F. Supp. 2d 1146.

151. *Id.* at 1150 (citing Letter from Benjamin H. Grumbles, Assistant Adm'r, U.S. Envtl. Prot. Agency, to Michael Sole, Sec'y, Fla. Dep't of Envtl. Prot. (2009 Determination Letter) 6-8 (Jan. 14, 2009) (AR010962-64).

152. *Id.* at 1146.

153. *Id.* at 1147.

154. *Id.* at 1149.

155. Florida Wildlife Fed'n, Inc. v. Jackson, No. 4:08CV324-RHWCS, 2009 WL 5217062, at *2 (N.D. Fla. Dec. 30, 2009).

156. *Id.*

dischargers sued both against the "necessity" determination and the numerical criteria.[157]

The trial court split the loaf. It found objections to the necessity decision by the state and its Agriculture Commissioner "curious," given FDEP's conclusion years earlier that numbers were needed.[158] Indeed, the court continued,

> [given that] other state agencies—as shown by their position in this litigation—have dug in with vigor to oppose even the rather obvious proposition that narrative criteria were failing, there are good grounds to doubt that FDEP would have been able to accomplish what FDEP has long said needs to be done.[159]

Then the wheels began to loosen. EPA had accepted the state's characterization of the process as "translating" Florida's previous narrative criteria, which were of course harm-based ("not adversely affect . . ").[160] That was a mistake. Fortunately for EPA, it had built harm analyses into its numbers for lakes and springs. For rivers and streams, on the other hand, it used existing high-quality waters as its benchmark without showing the relationship to harm. The court went on to invite EPA to go back and prove its numbers: "an experienced environmental scientist might be able to conclude," it stated, at certain thresholds harm was "likely."[161] Not an insurmountable burden of proof. Further, the court went on, EPA could unhook itself from the state's "translation" approach and obviate the harm question entirely.[162] Either way, redone, the rule could be approved.[163]

When EPA returned to its standard-setting, however, the atmosphere outside had reached a fever pitch. Lobbies for Florida development industries and water agencies, fleets of lawyers in tow, waved studies showing astronomical costs, billions of dollars per year were the numerical standards applied. They turned out their employees. They blitzed the media. The farm industry itself was aflame. Nutrient standards became a political campaign deeply inflected with anti-government and anti-Obama rhetoric. The new governor had been the Tea Party candidate, and the legislature had turned in that direction with a vengeance. The Florida congressional delegation introduced an appropriations rider prohibiting EPA from setting Florida standards at all.[164] At the same time, FDEP had finally produced its version of nutrient standards, with heavy input from industry lawyers, and they were duly state-approved.[165] Within them was an industry-drafted provision severely limiting EPA's hand: if the Agency disapproved any part of the Florida standards, they would all fall.[166] EPA now had the ball, with an all-or-nothing "poison pill" inside. The Agency could go virtually alone back into that maelstrom, repromulgate and defend its own standards, or accede to the Florida scheme.

EPA acceded. It moved to amend the consent decree, terminate its necessity determination, and approve Florida's water quality standards, which contained an impressive number of loopholes.[167] The Agency's retreat was challenged in court, but upheld on the merits, citing, inter alia, state "primary responsibility" in this arena.[168]

C. *Epilogue*

Florida has in fact adopted numeric nutrient criteria. Through a number of escape hatches and processes, it has simply made them as inoperative as possible.

For openers, the standards exempt both intermittent waters and *all* man-altered canals and channels used for water management, irrigation, or water supply, and that have "poor stream habitat or habitat components."[169] Here, only narrative criteria apply. In effect, South Florida waters drop off the table, even ones feeding into the Everglades. This rule, as drafted by industry lawyers, is said to spare "needlessly expending millions of dollars" for no "environmental benefit."[170]

A more generic obstacle arises with a primary function of water quality standards, the determination of "impaired waters," which of course triggers the TMDL process and the need for cleanup. Florida's assessments begin with preliminary planning and study lists, "for purposes of reporting to EPA" only, and "without regulatory effect."[171] To make the "impaired" list, the water must, over a three-year period, either flunk a "floral assessment" (think: a cap of green slime) or *both* the numerical standard *and* a biological stream condition index, measuring selected indicators, case-by-case.[172] In this process, numbers play only an ancillary role.[173]

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157. Florida Wildlife Fed'n, Inc. v. S. Florida Water Mgmt. Dist., 647 F.3d 1296, 1299 (11th Cir. 2011).
158. *FWF*, 853 F. Supp. 2d 1157.
159. *Id.* at 1177 n.17.
160. *Id.* at 1161.
161. *Id.* at 1169.
162. *Id.* at 1168.
163. A second wheel had also loosened, with EPA acceptance of "site specific alternative criteria" (SSACs), upon a showing that such criteria did not impair "existing uses." Although SSAC analysis threatened to return the inquiry to case-by-case proof of harm, the rule that finally emerged required numbers of the SSAC's as well. As it would turn out, the state found other ways to avoid them.
164. *See* H. Amdt. 143 to H.R. 1—112th Congress (2011-2012), submitted by Representative Rooney (R.-Fla.), http://beta.congress.gov/amendment/112th-congress/house-amendment/143 (last visited Apr. 15, 2014).
165. Fla. Admin. Code Ann. r. 62-302.530(47)(b).
166. Fla. Admin. Code Ann. r. 62-302.531(9). *See* James S. Alves & David Childs, Amendment #1, Nov. 30, 2011, on file with author.
167. Florida Wildlife Fed'n, Inc. v. McCarthy, No. 4:08CV324-RH/CAS, 2014 WL 51360, at *5, 44 ELR 20006 (N.D. Fla. Jan. 7, 2014)
168. *Id.* at *7.
169. Fla. Admin. Code Ann. r. 62-302.200(36).
170. *See* James S. Alves & David W. Childs, Amendment #2, Nov. 30, 2011, on file with author. The proposal is the adapted rule, jot-for-jot.
171. Fla. Admin. Code Ann. r. 62-303.150(1).
172. Fla. Dept. of Envtl. Prot., Implementation of Florida's Numeric Nutrient Standards, at 23 tbl. 5 (2013).
173. For an earlier description of Florida's "winnowing-out" process for potentially impaired waters, see Cynthia D. Norgart, *Florida's Impaired Waters Rule: Is There a "Method" to the Madness?*, 19 J. Land Use & Envtl. L. 347 (2004). For a more contemporary description, see Petitioners' Proposed Final Order at App. A, *Fla. Wildlife Fed. v. Fla. Dept. of Envtl. Prot.*, No. 11-6137RP (Fla. Div. of Admin. Hearing Apr. 9, 2012), an illustrated 15-page

And we are not done exempting. These analyses aside, waters still will not be listed as "impaired" unless FDEP has determined the *cause* of the impairment, and discounted other sources.[174] At this point, implementation of the standards is subject to all the difficulties of tort law—proof of causation, exposure pathways, and effects—that pollution control law aims to eliminate. If one wanted to reduce one's list of impaired waters short of cleaning them up, the requirements just described would surely be Option A.[175]

To no one's surprise, it has worked. According to calculations submitted by plaintiffs in their challenge to EPA's approval, the standards exclude most flowing waters in South Florida (3,043 miles), tidal creeks (6,333 miles), water management canals (11,497 miles), intermittent streams (8,701 miles), and other downstream waters . . . by their estimate, 65% of the waters covered by the earlier consent decree.[176] Even were these numbers halved, they would represent a significant drop.

The drop in impaired water listings is also precipitous. In 2010, Florida reported 90% of its lakes and 80% of its rivers and streams to be impaired.[177] Its most recent survey, however, following its two-tiered, further-study-and-then-identify-the-sources process, found only 3,400 waters impaired and a whopping 54,111 to be undeterminable at this time.[178] A limbo of insufficient information.[179]

As the dust settles, Florida has accepted numbers, but has greatly limited their effect. Industry, having planted the loopholes, is now training its members in ways to exploit them. Meanwhile, the state's waters are telling their own story, and it is not pretty. The St. Lucie River and its estuary are coated with algae, as is the Caloosahatchee on the southwest side. Toxin levels on the St. Lucie measure 287 times the safe limit for recreation. Below the Indian River, record numbers of dolphins, manatees, and pelicans have turned up dead.

The governor has blamed the U.S. Army Corps of Engineers. Legislators have called for more study.

hooks-and-ladders sequence of questions and escape valves from which only one path, of 15 possible, results in a finding of nonattainment.

174. Fla. Admin. Code Ann. r. 62-303.150.

175. Florida is working to shorten its list further by redefining acceptable levels of dissolved oxygen and fecal coliforms. *See* FDEP Integrated Water Quality Assessment for Florida: 2012 305(b) Report and 303(d) List Update at 32. It is also proposing to downgrade waters now classified as recreational, placing a new burden on the public to prove these canals, lagoons, and other bodies are "*commonly* used for navigation, boat access or other *frequent* recreational activities." A rather heavy requirement where the waters smell bad are now floating rafts of slime. More polluted waters will fall out. *See* Response for Plaintiff at 8 Florida Wildlife Federation v. Jackson, No. 4:08-cv-00324-RH-WCS, 2009 WL 5128290 (N.D. Fla.), at *4.

176. Response for Plaintiff at *5.

177. *See* FDEP Integrated Water Quality Assessment for Florida: 305(b) Report and 303(d) List, 2010.

178. TMDL Tracker, http://webapps.dep.state.fl.us/DearTmdl/dashboardAction.do?method=dashboard&dashBoardTabName=AssessmentsDashboard (last visited Apr. 15, 2014).

179. Granted, CWA §1313(d) requires states to set *priorities* for its impaired waters, but what is happening here is quite different. Florida has instead attacked the first step, identification, and made it extremely difficult to accomplish.

V. Chesapeake Bay

In January 2011, the American Farm Bureau Federation and its Pennsylvania affiliate filed suit against EPA to enjoin nutrient abatement plans and a multistate TMDL for the Chesapeake Bay Watershed.[180] A short time later, an amended complaint added as plaintiffs The Fertilizer Institute, National Pork Producers Council, National Corn Growers Association, National Chicken Farm Council, U.S. Poultry and Egg Association, and the National Turkey Federation. At a later point in the proceedings, 21 states with dominant agricultural industries (and governors of a single political party) filed an amicus brief challenging the TMDL.[181] The Chesapeake Bay has become a line of battle for nutrient dischargers and their lobbies.

The federalism issue in this litigation is somewhat unique. It finds industries and states far from the fray opposing a process between EPA, six states, and the District of Columbia concerning a large resource they hold in common. It claims in effect that, in the name of federalism, collaboration should not go this far.

A. *The Bay*

The Chesapeake is the largest estuary in America, fed by some 100,000 streams and tributaries as far inland as the Appalachian and Adirondack Mountains.[182] Its abundance in blue crabs made Maryland a fine-dining destination,[183] its migratory waterfowl drew droves of outdoor sportsmen, its fisheries fed the nation's capital, and its oysters lay so thick they ripped the hulls of wooden ships.[184] Over the last century, these resources began to disappear, fisheries collapsed, water quality plummeted, seabed grasses died, toxic algae bloomed, the classic effects of nutrient overloads, primarily from agricultural sources (39% of nitrogen, 45% phosphorous, 60% sediments).[185] Like all estuaries, the Chesapeake was particularly vulnerable to these loadings: what went in did not flush out but, rather, remained and triggered a trophic cascade.

In the 1970s, prompted by a grassroots citizen movement to restore the Bay, Maryland's Sen. Charles Mathias

180. Am. Farm Bureau Fed'n v. U.S. EPA, No. 1:11-CV-0067, 2013 WL 5177530, 43 ELR 20213 (M.D. Pa. Sept. 13, 2013).

181. Brief of the States of Kansas et al. as Amici Curiae in Support of Reversal, American Farm Bureau Federation et al. v. EPA, No. 13-4079 (3d Cir. Feb. 3, 2014).

182. Chesapeake Bay Program, *The Bay Watershed*, http://www.chesapeakebay.net/thebaywatershed.aspx?menuitem=13942 (last visited Mar. 30, 2014).

183. The Chesapeake's blue crab culture is captured in William H. Warner's Pulitzer Prize winning book, *Beautiful Swimmers: Watermen, Crabs and the Chesapeake Bay* (1976).

184. Sea Grant Maryland, *Oysters*, http://www.mdsg.umd.edu/topics/oysters/oysters (last visited Mar. 30, 2014).

185. *See* U.S. EPA, Chesapeake Bay Executive Order §502 Guidance 1-2 (May 15, 2010), *available at* http://www.epa.gov/nps/chesbay502/pdf/full_03_15_ 2010.pdf. The animal loadings are significant: the Pocomoke River Watershed on Maryland's Eastern Shore alone produces more than one million chickens per year. In 1996, the river was closed after 30,000 fish died, soon followed by a nearby outbreak of *Pfiesteria piscicida*, a toxin that flourishes in eutrophic waters. Margaret Kriz, *Pfiesteria Hysteria*, 29 Nat'l J. 1783 (1997); Margaret Kriz, *Fish and Fowl*, 30 Nat'l J. 450 (1998).

obtained federal funding for a study that identified nutrient pollution as the problem, leading in 1983 to the seminal Chesapeake Bay Agreement among the four adjoining states, Maryland, Pennsylvania, Virginia, and the District of Columbia to collaborate on the issue.[186] In 1987, the states upped their ante with a new Agreement with specific reduction targets for nitrogen and phosphorous (40% by the year 2000),[187] supported by federal legislation establishing the Chesapeake Bay Program, to be administered at the federal level by EPA.[188] With no allocations as targets, however, and zero requirements, the program showed little progress, leading to yet another Agreement in 2000 that postponed the cleanup date and proposed, inter alia, to "develop and implement locally supported watershed plans."[189] By 2006, however, a General Accountability Office report found that at the current rate, the Bay would remain polluted "for decades."[190] A GAO report the following year showed the Bay actually going backwards, findings confirmed by those of the citizen-based Chesapeake Bay Foundation.[191] It became apparent to the affected states that the cooperation needed more beef.

Meanwhile, the 2000 Agreement had been accompanied by new federal legislation as well, once more led by the Maryland delegation, that pointed EPA towards a more active role. In consultation with the states, the Agency was to "ensure that management plans are developed and implementation begun" in order to "achieve and maintain" the targeted nutrient reductions.[192] Despite this command, the amendment went largely into remission for the next eight years, surfacing again in 2008 with a new Administration and legal actions that were pecking away at Chesapeake Bay cleanup, one state and tributary at a time.[193]

In 2009, EPA, in consultation with the states (which by this time included Delaware, New York, and West Virginia), announced more specific nutrient reduction targets (largely mirroring the goals of the latest Agreement), and two implementing measures: a Bay-wide TMDL to allocate the reductions among the states (accompanied by smaller scale TMDLs for individual rivers), and "watershed improvement plans" (WIPs), to provide "reasonable assurance that they would be implemented."[194] Recognizing that its statutory authority over agricultural sources was limited, EPA also proposed to "strengthen our individual and collective resolve" by outlining measures the Agency could take to incentivize action here, including cracking down on point sources over which it had direct control and more scrupulous review of ongoing state TMDL performance.[195] These initiatives, while decried by the farm industry and some state political officials, were supported by state environmental agencies, including one administrator who was willing to say the obvious: that he would be "unlikely to get support for the needed Bay actions" without a "stronger federal 'hammer.'"[196]

Comments on the TMDL and WIP guide were extensive, from parties on all sides. Perhaps, the most unusual grouping was the Federal Clean Water Association, consisting of the American Coke and Chemicals Institute, the American Forest and Paper Association, American Iron and Steel Institute, American Petroleum Institute, Ford Motor Company, Freeport-McMoRan Copper and Gold, Mid America Crop Life Association, National Association of Homebuilders, International Council of Shopping Centers, Real Estate Roundtable, and the Weyerhauser Company.[197] In December 2010, the Bay-wide TMDL issued, laying down the framework for the work ahead. Bowing to the achievable, nutrient reduction targets were pared down from the earlier 40% level to numbers in the 20s.[198] Allocations were divided among the states.[199] Under a presidential Executive Order, all federal agencies with anything to do with the Chesapeake, including the U.S. Departments of Agriculture, Defense, and Transportation, received their own action plans and deadlines, again under EPA supervision.[200] The federal side of the equation was going to clean up its act too.

The first rounds of WIPs soon followed, preceded in some instances by hard negotiation and compromise.[201] The date for achieving these plans stretched out to 2025.[202]

186. Chesapeake Bay Program, *Bay Program History*, http://www.chesapeakebay.net/about/how/history (last viewed Mar. 30, 2014).
187. *Id.*
188. 33 U.S.C. §1267.
189. David Fahrenthold, *Failing the Chesapeake Bay*, Wash. Post, Dec. 27, 2008 (noting that by 2000, the cleanup reduced phosphorus only by 25% and nitrogen only by 13%); Chesapeake Bay 2000 Agreement, Water Quality Protection and Restoration, at 6, *available at* http://www.chesapeakebay.net/documents/cbp_12081.pdf.
190. U.S. Government Accountability Office (GAO), Chesapeake Bay Program: Improved Strategies Are Needed to Better Assess, Report, and Manage Restoration Progress (July 12, 2006), *available at* http://www.gao.gov/new.items/d0696.pdf.
191. U.S. GAO, Development Growth Outpacing Progress in Watershed Efforts to Restore the Chesapeake Bay (Sept. 10, 2007), *available at* http://www.epa.gov/oig/reports/2007/20070910-2007-P-00031.pdf.
192. 33 U.S.C. §1267(g)(1).
193. *See* American Canoe Ass'n v EPA, 30 F. Supp. 2d 908, 29 ELR 20383 (E.D. Va. 1998) (Virginia); Kingman Park Civic Ass'n v EPA, 84 F. Supp. 2d 1, 30 ELR 20017 (D.D.C. 1999) (District of Columbia).
194. U.S. EPA, Clean Water Act §303(d): Preliminary Notice of Total Maximum Daily Load (TMDL) Development for the Chesapeake Bay, 74 Fed. Reg. 47792 (Sept. 17, 2009).
195. Letter from Donald S. Welsh, U.S. EPA Region III Administrator, to Hon. John Griffin, Md. Dept. of Natural Resources (Sept. 11, 2008), 1, *available at* http://www.dnrec.delaware.gov/swc/wa/Documents/ChesapeakePhaseI-WIP/EPA_ExpectationsAndConsequences_1209.pdf.
196. Karl Blankenship, *As Talk of TMDL's Moves to Action Here's What You Should Know*, Chesapeake Bay J. (Jan. 2010). To be sure, some state strategies were critical of the proposal as they first emerged, but in the give-and-take with EPA these objections were ultimately resolved. *See The Clean Water Act Returns*, *supra* Author's Note, at 10221.
197. Federal Water Quality Coalition, Comments of Federal Water Quality Coalition on the Draft Chesapeake Bay Total Maximum Daily Load (undated) (on file with author) (omitting names of yet other members, including the Western Coalition of Arid States).
198. U.S. EPA, Chesapeake Bay TMDL Executive Summary, ES-1, Dec. 29, 2010, *available at* http://www.epa.gov/reg3wapd/pdf/pdf_chesbay/FinalBayTMDL/BayTMDLExecutiveSummaryFINAL122910_final.pdf.
199. *Id.*
200. Exec. Order No. 13508 (May 12, 2009), *available at* http:// www.whitehouse.gov/the_press_office/Executive-Order-Chesapeake-Bay-Protection-and-Restoration.
201. TMDL Executive Summary (ES), *supra* note 198; *see also* Blankenship, *supra* note 196.
202. TMDL Executive Summary (ES), *supra* note 198, at 13-14.

While the first-round documents were often generalized and reliant on voluntary controls, they showed a wide range of state approaches, including buffer strips, nutrient application factors, and intersource trading.[203] The process was clearly flexible, as shown by these results alone. On the other hand, it had solidified agreement on fixed reduction targets and specific means to achieve them. Six states, the District of Columbia, and the federal government were working together to clean up the Bay.

B. The Litigation

Inevitably, a wide array of agricultural interests that had long enjoyed minimal responsibilities under the CWA sued to overturn the TMDL and cleanup plans. Setting aside procedural challenges, the nature of their argument is that EPA exceeded its authority by infringing on state rights to manage their waters, imposing source controls, and extending TMDLs beyond state boundaries. None seem compelling.

As seen earlier, the CWA did not leave the restoration of the nation's waters to the states, but rather created a structure of checks and balances in which every decision affecting water quality, if not taken directly by EPA, was subject to EPA supervision and in most cases, prior approval. All state rights here are circumscribed.

With respect to nonpoint source controls, however, those in the Chesapeake Bay program remain a matter of state choice, so long as they have a reasonable chance of working. Section 1313(d) authorizes EPA to approve only those TMDLs with reductions "necessary" to meet water quality standards, which implies that reductions are likely to occur, because if they are mere hypotheses or have showed little success to date, then more reductions elsewhere would be required. This said, the case for the Chesapeake implementing plans is all but sealed by the CWA amendments of 2000 that oblige EPA to "ensure" that reduction plans be both "developed and implemented," the WIPs.[204] These amendments standing alone green light this aspect of the program. In fact, they direct it.

The argument over the Bay-wide TMDL itself seems also somewhat rhetorical. Reading the Act literally, and as discussed earlier with regard to a Gulf dead zone TMDL, §1313(d) compels EPA to prepare one for impaired waters where states have not, and states have not. Period. States are further required, as noted earlier, to ensure that their standards do not interfere with downstream water quality . . . the implementation of which will require limits calibrated by their effect on the Bay, which in turn cannot be done without relating to other state inputs: a de facto TMDL. Both roads lead to Rome.

In brief, the CWA prescribes the TMDL process as the way to clean up polluted water. The joint Chesapeake Bay TMDL, as all TMDLs, is bottomed on state reductions and implementation plans. True, the scope is new. The scope is also what in this case makes meeting the CWA's requirements possible.

On September 13, 2013, the U.S. District Court for the Middle District of Pennsylvania upheld the Chesapeake Bay TMDL. If found, inter alia, that, while the CWA did not authorize EPA to "establish or otherwise take over TMDL implementation plans," it would "go too far" to say the Agency "has no role in developing them," pointing not only to statutory language authorizing the WIPs, but also to EPA's continuing authority over TMDL implementation under the continuing planning process.[205] It cited, further, EPA regulations stating that, in order to approve a TMDL, it must perforce assess the bona fides of its load allocations.[206] As to the federalism argument more generally, the court found industry characterizations of the process as "threatening" and "coercive" to be unpersuasive.[207] The record was "replete with numerous communications that demonstrate discussion, debate and negotiation between the federal and state government, not coercion."[208] Indeed so, on both counts.

C. Epilogue

The Bay is beginning to turn the corner, slowly. The Chesapeake Bay Foundation's biannual State of the Bay report shows five of 13 indicators of Bay health improving, seven holding their own, and one declining.[209] Given the "before" part of the story, this is impressive news. Subsequent reports will doubtless improve as the next round of WIPs kick in, due in 2017, with all necessary measures implemented by 2025.[210] These are ambitious deadlines to be sure, but then again, so is the CWA itself. That ambition has proven to be one of its strengths.

In this context, the idea of cooperative federalism only strengthens the Bay program's hand. Perhaps, the farm industry's accusation to the contrary misunderstands the nature of federalism itself to require agriculture's cooperation as well, even consent. The concept does not go this far. This industry, as all others and as citizen groups as well, have rights to information and comment on all federal proposals, and similar rights under state law. Many sectors of the agriculture industry exercised these rights in this case, quite amply. But neither the National Turkey Foundation

203. *Id.* at ES-10-12.
204. 33 U.S.C. §1267(g).
205. Am. Farm Bureau Fed'n v. EPA, No. 1:11-CV-0067, 2013 WL 5177530, at 20.
206. *Id.* at 23.
207. *Id.* at 29.
208. *Id.*
209. Chesapeake Bay Foundation, *2012 State of the Bay Report*, *available at* http://www.cbf.org/about-the-bay/state-of-the-bay/2012-report. The Bay ecosystem, however, remains in poor condition, still struggling with polluted water, degraded habitats, and low populations of many fish and shellfish species. Chesapeake Bay Program, *Bay Health*, *available at* http://www.chesapeakebay.net/track/health/bayhealth.
210. *See* U.S. EPA, *Chesapeake Bay TMDL, How Does It Work?, Phase II WIPs*, http://www.epa.gov/reg3wapd/tmdl/ChesapeakeBay/EnsuringResults.html?tab2=1&tab1=2 (last visited Mar. 31, 2014); *see* U.S. EPA, *Chesapeake Bay TMDL, How Does It Work?, Ensuring Results*, http://www.epa.gov/reg3wapd/tmdl/ChesapeakeBay/EnsuringResults.html?tab2=1&tab1=2 (last visited Mar. 31, 2014).

nor the American Farm Bureau are states, and that is where federalism ends.

VI. Cooperative Federalism Revisited

Cooperative federalism is a coat of many colors, each statute with its particular hue. The CWA's version is distinctly federal, with an important state function via water quality standards for the cleanup of impaired waters. Even here, however, EPA is always present, sometimes initiating, other times responding, and obliged to act when state performance is unsatisfactory or unperformed at all. States' responses have varied, and vary even with their political leadership from year to year, but they range from the can-do attitude seen on the Chesapeake to that along the Mississippi: hell no. Or, in the case of Florida, a very reluctant dance.[211]

In this same dialogue, yet two more actors emerge with significant roles to play. The first is citizen groups that have moved many parts of the CWA forward over institutional resistance, and continue to do so. The Natural Resources Defense Counsel (NRDC) is more responsible for the implementation of the NPDES program than any entity in America short of an on-again, off-again EPA. The Chesapeake Bay Foundation's efforts put the Bay on the map and continue to move it towards a clean bill of health. The same can be said for the Waterkeeper organizations and hundreds like them who have taken their streams, springs, and lakes to heart. Federalism in this context becomes a three-way, with these groups offsetting the political and economic pressures that often overwhelm the first two.

This leaves the courts, which under the CWA have their own responsibilities to perform. The citizen suit provisions, on which Congress explicitly depended when drafting the act, depend in turn on judicial review. When states refuse to act, there is the EPA, but when both states *and* EPA refuse to act, there is only the judiciary and unless it responds, the Act fails. Once before the court, whatever the merits of the case before them, the most unreliable argument is the lingering myth of state primacy. Congress intended, and went on to mandate, no such thing. The CWA gives states an increasingly critical role in restoring polluted waters—that much is true. But Congress, with the experience of hindsight at the time that has only been confirmed in the years since, did not expect states to do this willingly or well without a vigilant EPA and, where necessary, judicial review. In the end, the CWA is in fact a four-way arrangement of cooperative federalism from which each corner responds.

The CWA's idealistic and transcending goal, applicable to all of its parts, remains to "restore and maintain" the nation's waters. America has still—with one entire industrial sector, one discrete set of pollutants, and one yet largely unfulfilled set of responsibilities—a long way to go. Cooperative federalism will help the nation get there. As we have seen, the opposite is also true.

211. The deep resistance of Florida and Mississippi described here highlight a phenomenon labelled "uncooprerative federalism" in the literature. *See, e.g.*, Jessica B. Posen & Heather K. Gerken, *Uncooperative Federalism*, 118 Yale L.J. 1256 (2009); Adam Babich, *The Supremacy Clause, Cooperative Federalism, and the Full Federal Regulatory Purpose*, 64 Admin. L. Rev. 1 (2012). However viewed in the abstract, the tensions are heightened in these CWA cases by two other phenomena deserving mention. The first is the presence of overarching government subsidies for agricultural production, boosted in recent years by biofuels, that dwarf incentives for on-farm conservation practices. More weight, then, falls on the CWA partnership. The second is a new political spectrum, one end of which considers even participation in federal programs anathema, (e.g. mass transit, health insurance, medicaid). It seems beyond coincidence that the states objecting to the CWA programs described here are those refusing collaboration on other issues more broadly. In a larger sense, the future of cooperative federalism depends on the answer to a larger question; whether there should be cooperation at all.